

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

Claim 1. (Currently Amended) ~~A pseudo Pseudo~~ 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area associating means for associating one or more sets of areas specified on one image and ~~the other at least one other~~ image ~~or images~~, as common ~~parts~~ areas;

an image transforming means for transforming one or both images, through affine transformation, ~~by matching the corresponding into matched common~~ areas specified on the images; and

an image display means for displaying both images as superposed on each other after transformation of at least one image.

Claim 2. (Currently Amended) ~~A pseudo Pseudo~~ 3-D space representation system as defined in claim 1, ~~which further comprises further comprising~~ an operation image display means for displaying a plurality of images and an area specifying means for allowing a user to specify areas on each of two or more images displayed to the user.

Claim 3. (Currently Amended) ~~A~~ pseudo Pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area transforming means for transforming an area specified on an image, through affine transformation;

a specified area retrieving means for retrieving ~~a part~~ an area common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation ~~in such a way that so as to match~~ the specified area and the retrieved area ~~may matched~~ with each other; and

an image display means for displaying both images as superposed on each other after transformation of at least one image.

Claim 4. (Currently Amended) ~~A~~ pseudo Pseudo 3-D space representation system as defined in claim 3, ~~which further comprises~~ further comprising an operation image display means for displaying an image and an area specifying means for specifying an area on the displayed image.

Claim 5. (Currently Amended) ~~A~~ pseudo Pseudo 3-D space representation system as defined in any one of claims 1 to 4 , ~~which further comprises~~ comprising a transparency specifying means for specifying transparency for one image respective

to the other another image, and wherein the image display means displays the images according to the specified transparency of the image.

Claim 6. (Currently Amended) A pseudo Pseudo 3-D space representation system as defined in any one of claims 1 to 4, wherein the image is provided with metadata, and the image display means is provided with a metadata display means for displaying metadata added to the image when a user selects the image.

Claim 7. - (Cancelled)

Claim 8. (Currently Amended) A pseudo Pseudo 3-D space representation system as defined in ~~claim 7~~ any one of claims 43, 44, 63, and 64, wherein the image transforming means has an interpolation image generating means for generating a series of interpolating images by affine transformation until a next original image is displayed, and the display image changing means has an interpolation image display means for subsequently displaying the interpolation images generated by the interpolation image generating means.

Claim 9. (Currently Amended) A pseudo Pseudo 3-D space representation system as defined in claim 8, ~~which further comprises comprising~~ a traversing time changing means for changing a traversing time necessary for changing a display image from

an unchanged image to an original image, to represent a pseudo temporal distance according to a difference between the unchanged image and the original image.

Claim 10. (Currently Amended) ~~A pseudo Pseudo~~ 3-D representation system as defined in claim 8, wherein each image is provided with metadata including at least time information, and a calculation means is provided for calculating a time necessary for changing ~~to a~~ display from an original image ~~of one image to the~~ another image, and the changing is completed within ~~the a~~ calculated time.


Claim 11. (Currently Amended) ~~A pseudo Pseudo~~ 3-D space representation system as defined in claim 8, wherein each image is provided with metadata including at least information about a position and a direction thereof, a calculation means is provided for calculating relative positions for each of two images according to the metadata, and changing ~~to a~~ display from an original image ~~of one image to the~~ another image is completed according to ~~the a~~ specified relationship between two positions.

Claim 12. - (Cancelled)

Claim 13. (Currently Amended) ~~A pseudo Pseudo~~ 3-D space representation system as defined in ~~claim 12~~ any one of claims 45, 46, 65, and 66, wherein the image

transforming means has an interpolation image generating means for generating a series of interpolating images by affine transformation until a next original image is displayed, and the display image changing means has an interpolation image display means for subsequently displaying the interpolation images generated by the interpolation image generating means.

Claim 14. (Currently Amended) ~~A pseudo Pseudo~~ 3-D space representation system as defined in claim 13, ~~which further comprises comprising~~ a traversing time changing means for changing a traversing time necessary for changing ~~a~~ display image from an unchanged image to an original image, to represent a pseudo temporal distance according to a difference between the unchanged image and the original image.

Claim 15. (Currently Amended) ~~A pseudo Pseudo~~ 3-D space representation system as defined in claim 13, wherein each image is provided with metadata including at least time information, and a calculation means is provided for calculating a time necessary for changing ~~to a~~ display from an original image ~~of one image to the~~ another image, and the changing is completed within ~~the a~~ calculated time.

Claim 16. (Currently Amended) ~~A pseudo Pseudo~~ 3-D space representation system as defined in claim 13, wherein each image is provided with metadata including at

least information about a position and a direction thereof, a calculation means is provided for calculating relative positions for each of two images according to the metadata, and changing ~~to a~~ display from an original image ~~of one image to the~~ another image is completed according to ~~the~~ a specified relationship between two positions.

Claim 17. (Currently Amended) ~~A pseudo Pseudo~~ 3-D space representation system as defined in any one of claims 1 to 4, wherein the image display means displays specified two or more images in succession in ~~the~~ a specified order.

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Claim 18. - (Cancelled)

Claim 19. (Currently Amended) ~~A pseudo Pseudo~~ 3-D space constructing system, ~~which has comprising~~ a server device functioning as a pseudo 3-D space representation system, ~~as~~ defined in any one of claims 1 to 4, and connected to a number of client devices through a network, wherein the server device has an image database storing a plurality of images, provides at least one function of the pseudo 3-D space representation system to the client devices through the network, receives from the client device an image associated with a specified area of an image stored in the database by using the pseudo 3-D space representation system, and stores said image into the database.

Claims 20. - 29. - (Cancelled)

Claim 30. (Currently Amended) ~~A program~~ Program for ~~causing operating~~ a computer ~~to work~~ as a pseudo 3-D space representation system, as defined in any one of claims 1 to 4.

Claim 31. - (Cancelled)

Claim 32. (Currently Amended) ~~A computer~~ Computer readable recording medium with a recorded program, as defined in claim 30.
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Claim 33. (Currently Amended) ~~A program~~ Program for ~~causing operating~~ a computer ~~to work~~ as a pseudo 3-D space constructing system, as defined in claim 19.

Claim 34. (Currently Amended) ~~A program~~ Program for ~~causing operating~~ a computer ~~to work~~ as a game system, utilizing a pseudo 3-D space representation system as defined in ~~claim 20~~ any one of claims 49, 50, 69, and 70.

Claim 35. (Currently Amended) ~~A program~~ Program for ~~causing~~ operating a computer ~~to work~~ as an electronic map display system, utilizing a pseudo 3-D space representation system as defined in ~~claim 21~~ any one of claims 51, 52, 71, and 72.

Claim 36. (Currently Amended) ~~A program~~ Program for ~~causing~~ operating a computer ~~to work~~ as an electronic map providing system, utilizing a pseudo 3-D space representation system as defined in ~~claim 22~~ any one of claims 53, 54, 73, and 74.

Claim 37. (Currently Amended) ~~A program~~ Program for ~~causing~~ operating a computer ~~to work~~ as a navigation system, utilizing a pseudo 3-D space representation system as defined in ~~claim 23~~ any one of claims 55, 56, 75, and 76.

Claim 38. (Currently Amended) ~~A program~~ Program for ~~causing~~ operating a computer ~~to work~~ as a navigation system, utilizing a pseudo 3-D space representation system as defined in ~~claim 24~~ any one of claims 57, 58, 77, and 78.

Claim 39. - (Cancelled)

Claim 40. (Currently Amended) A ~~program~~ Program for causing operating a computer to ~~carry out~~ execute an electronic map providing method, as defined in ~~claim 28~~ any one of claims 59 and 60.

Claim 41. (Currently Amended) A ~~program~~ Program for causing operating a computer to ~~carry out~~ execute a navigation method, as defined in ~~claim 29~~ any one of claims 61 and 62.

Claim 42. - (Cancelled)

Claim 43. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images; and

an image display means for displaying both images as superposed on each other;

wherein the image transforming means has a means for transforming image shape in order that the selected image or the specified image of the both images superposed each other by the image display means is transformed to the original shape, the image shape being the shape of the other image of the both images or the both images, and the image display means has an image presenting means for presenting selectable images other than the original one and a display image changing means for changing the displayed images by displaying both images transformed by the image transforming means.

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Claim 44. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other; and

an image display means for displaying both images superposed on each other;

wherein the image transforming means has a means for transforming image shape in order that the selected image or the specified image of the both images superposed each other by the image display means is transformed to the original shape, the image shape being the shape of the other image of the both images or the both images, and the image display means has an image presenting means for presenting selectable images other than the original one and a display image changing means for changing the displayed images by displaying both images transformed by the image transforming means.

Claim 45. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images; and

an image display means for displaying both images as superposed on each other;

wherein the image display means has an area presenting means for selectively presenting an area on an image associated with an area on another image and a display image changing means for changing display image by displaying the associated

original image of the another image when the area presented by the area presenting means is selected.

Claim 46. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other; and

an image display means for displaying both images superposed on each other;
wherein the image display means has an area presenting means for selectively presenting an area on an image associated with an area on another image and a display image changing means for changing display image by displaying the associated original image of the another image when the area presented by the area presenting means is selected.

Claim 47. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images; and

an image display means for displaying both images as superposed on each other;

wherein an image is provided with metadata including at least information about a position and a direction thereof and there is provided a means for identifying a position of the image based on the each metadata and associating the metadata with the electronic map and a means for displaying the image identified by the metadata on the electronic map.

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Claim 48. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other; and

an image display means for displaying both images superposed on each other; wherein an image is provided with metadata including at least information about a position and a direction thereof and there is provided a means for identifying a position of the image based on the each metadata and associating the metadata with the electronic map and a means for displaying the image identified by the metadata on the electronic map.



Claim 49. (New) A game system for playing a game for specifying an area on an image by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images; and

an image display means for displaying both images as superposed on each other;

such that further specifying an area of another image associated with the specified area and repeating the same until all specified images are linked, which has an image database storing a plurality of image groups each composed of a plurality of images associated with each other in such a way that areas of images can be linked only in a specified order and which presents a group of images for users to specify areas one on each of two images, links two specified areas, adds points of the links and presents remaining images of the group excepting two images which areas were specified and repeats the same steps.



Claim 50. (New) A game system for playing a game for specifying an area on an image by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other; and

an image display means for displaying both images superposed on each other; such that further specifying an area of another image associated with the specified area and repeating the same until all specified images are linked, which has an image database storing a plurality of image groups each composed of a plurality of images associated with each other in such a way that areas of images can be linked only in a specified order and which presents a group of images for users to specify areas one on each of two images, links two specified areas, adds points of the links and presents remaining images of the group excepting two images which areas were specified and repeats the same steps.



Claim 51. (New) An electronic map display system, comprising a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation system comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images; and

an image display means for displaying both images as superposed on each other;

wherein said pseudo 3-D space representation system is embedded in a corresponding position on an electronic map or is linked thereto and displayed thereon.


Claim 52. (New) An electronic map display system, comprising a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation system comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other; and

an image display means for displaying both images superposed on each other;

wherein said pseudo 3-D space representation system is embedded in a corresponding position on an electronic map or is linked thereto and displayed thereon.

Claim 53. (New) An electronic map providing system comprising a server device having an electronic map database containing a pseudo 3-D spatial electronic map prepared by embedding in corresponding positions thereof or linked thereto pseudo 3-D space representation images created by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said 3-D space representation system comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images; and

an image display means for displaying both images as superposed on each other;

wherein the server device connected to a number of client devices through a network retrieves the pseudo 3-D special electronic map in the electronic map

database in response to access from the client device and provides it to the client device.

Claim 54. (New) An electronic map providing system comprising a server device having an electronic map database containing a pseudo 3-D spatial electronic map prepared by embedding in corresponding positions thereof or linked thereto pseudo 3-D space representation images created by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said 3-D space representation system comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other; and

an image display means for displaying both images superposed on each other;
wherein the server device connected to a number of client devices through a network retrieves the pseudo 3-D special electronic map in the electronic map

database in response to access from the client device and provides it to the client device.

Claim 55. (New) A navigation system comprising a server device comprising an electronic map database containing a pseudo 3-D spatial electronic map comprising a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images; and

an image display means for displaying both images as superposed on each other;

prepared by embedding in corresponding positions thereon or linked thereto a pseudo 3-D space representation image created by using said pseudo 3-D space representation system, wherein the server device is connected to a number of client devices capable of detecting its present position through network and, in response to an access from any client device indicating its current position, it retrieves in the electronic map database and provides the client device with pseudo 3-D spatial

electronic map corresponding to the current position, thus navigating the user of the client device.

Claim 56. (New) A navigation system comprising a server device comprising an electronic map database containing a pseudo 3-D spatial electronic map comprising a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other; and

an image display means for displaying both images superposed on each other; prepared by embedding in corresponding positions thereon or linked thereto a pseudo 3-D space representation image created by using said pseudo 3-D space representation system, wherein the server device is connected to a number of client devices capable of detecting its present position through network and, in response to an access from any client device indicating its current position, it retrieves in the

electronic map database and provides the client device with pseudo 3-D spatial electronic map corresponding to the current position, thus navigating the user of the client device.

Claim 57. (New) A navigation system comprising an electronic map database containing a pseudo 3-D spatial electronic map prepared by embedding in corresponding positions thereon or linked thereto a pseudo 3-D space representation image created by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation system comprising:

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a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images; and

an image display means for displaying both images as superposed on each other;

such that said navigation system navigates a user by detecting a current position, searching an electronic map corresponding to the detected current position

in the electronic database, and displaying the pseudo 3-D spatial electronic map on a display screen of the user device.

Claim 58. (New) A navigation system comprising an electronic map database containing a pseudo 3-D spatial electronic map prepared by embedding in corresponding positions thereon or linked thereto a pseudo 3-D space representation image created by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation system comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other; and

an image display means for displaying both images superposed on each other; such that said navigation system navigates a user by detecting a current position, searching an electronic map corresponding to the detected current position

in the electronic database, and displaying the pseudo 3-D spatial electronic map on a display screen of the user device.

Claim 59. (New) An electronic map displaying method comprising preparing a pseudo 3-D spatial representation image utilizing a pseudo 3-D space representing method comprising:

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executing steps of displaying a plurality of images to a user, causing the user to specify areas on each of two or more images, associating the specified area of one displayed image with the specified area of the other displayed image as common parts, transforming the shape of one or both images through affine transformation by matching the paired areas and superposing both images;

wherein said pseudo 3-D spatial representation image is embedded in a corresponding position on an electronic map or linked thereto to display the same representation image on the electronic map.

Claim 60. (New) An electronic map displaying method comprising preparing a pseudo 3-D spatial representation image utilizing a pseudo 3-D space representing method comprising:

performing the steps of displaying an image to a user, causing the user to specify an area on the displayed image, transforming the specified area by affine

transformation, retrieving a part common to the specified area from a plurality of images, transforming the shape of one or both images through affine transformation to match the specified area with the area extracted by the retrieval and displaying both images superposed on each other;

wherein said pseudo 3-D spatial representation image is embedded in a corresponding position on an electronic map or linked thereto to display the same representation image on the electronic map.

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Claim 61. (New) A navigation method for navigating users, comprising providing through a network a pseudo 3-D spatial electronic map prepared by a pseudo 3-D space representing method comprising preparing a pseudo 3-D spatial representation image, said pseudo 3-D space representing method comprising:

executing steps of displaying a plurality of images to a user, causing the user to specify areas on each of two or more images, associating the specified area of one displayed image with the specified area of the other displayed image as common parts, transforming the shape of one or both images through affine transformation by matching the paired areas and superposing both images;

wherein said pseudo 3-D spatial representation image is embedded in or linked to corresponding positions on the electronic map.

Claim 62. (New) A navigation method for navigating users, comprising providing through a network a pseudo 3-D spatial electronic map prepared by a pseudo 3-D space representing method comprising preparing a pseudo 3-D spatial representation image, said pseudo 3-D space representing method comprising:

performing the steps of displaying an image to a user, causing the user to specify an area on the displayed image, transforming the specified area by affine transformation, retrieving a part common to the specified area from a plurality of images, transforming the shape of one or both images through affine transformation to match the specified area with the area extracted by the retrieval and displaying both images superposed on each other;

wherein said pseudo 3-D spatial representation image is embedded in or linked to corresponding positions on the electronic map.

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Claim 63. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images;

an image display means for displaying both images as superposed on each other;

an operation image display means for displaying a plurality of images; and
an area specifying means for allowing a user to specify areas on each of two or more images displayed to the user;

wherein the image transforming means has a means for transforming image shape in order that the selected image or the specified image of the both images superposed each other by the image display means is transformed to the original shape, the image shape being the shape of the other image of the both images or the both images, and the image display means has an image presenting means for presenting selectable images other than the original one and a display image changing means for changing the displayed images by displaying both images transformed by the image transforming means.

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Claim 64. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other;

an image display means for displaying both images superposed on each other;

an operation image display means for displaying an image; and

an area specifying means for specifying an area on the displayed image;

wherein the image transforming means has a means for transforming image shape in order that the selected image or the specified image of the both images superposed each other by the image display means is transformed to the original shape, the image shape being the shape of the other image of the both images or the both images, and the image display means has an image presenting means for presenting selectable images other than the original one and a display image changing means for changing the displayed images by displaying both images transformed by the image transforming means.

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Claim 65. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images;

an image display means for displaying both images as superposed on each other;

an operation image display means for displaying a plurality of images; and
an area specifying means for allowing a user to specify areas on each of two or more images displayed to the user;

wherein the image display means has an area presenting means for selectively presenting an area on an image associated with an area on another image and a display image changing means for changing display image by displaying the associated original image of the another image when the area presented by the area presenting means is selected.

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Claim 66. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other; and

an image display means for displaying both images superposed on each other;

an operation image display means for displaying an image; and
an area specifying means for specifying an area on the displayed image;
wherein the image display means has an area presenting means for selectively
presenting an area on an image associated with an area on another image and a display
image changing means for changing display image by displaying the associated original
image of the another image when the area presented by the area presenting means is
selected.

Claim 67. (New) A pseudo 3-D space representation system for representing a pseudo
3-D space with a plurality of 2-D images, comprising:

a specified area associating means for associating one or more sets of areas
specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through
affine transformation by matching the corresponding areas specified on the images;

an image display means for displaying both images as superposed on each
other;

an operation image display means for displaying a plurality of images; and
an area specifying means for allowing a user to specify areas on each of two or
more images displayed to the user;

wherein an image is provided with metadata including at least information
about a position and a direction thereof and there is provided a means for identifying

a position of the image based on the each metadata and associating the metadata with the electronic map and a means for displaying the image identified by the metadata on the electronic map.

Claim 68. (New) A pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other;

an image display means for displaying both images superposed on each other;

an operation image display means for displaying an image; and an area specifying means for specifying an area on the displayed image;

wherein an image is provided with metadata including at least information about a position and a direction thereof and there is provided a means for identifying a position of the image based on the each metadata and associating the metadata with the electronic map and a means for displaying the image identified by the metadata on the electronic map.

Claim 69. (New) A game system for playing a game for specifying an area on an image by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images;

an image display means for displaying both images as superposed on each other;

an operation image display means for displaying a plurality of images; and

an area specifying means for allowing a user to specify areas on each of two or more images displayed to the user;

such that further specifying an area of another image associated with the specified area and repeating the same until all specified images are linked, which has an image database storing a plurality of image groups each composed of a plurality of images associated with each other in such a way that areas of images can be linked only in a specified order and which presents a group of images for users to specify areas one on each of two images, links two specified areas, adds points of the links

and presents remaining images of the group excepting two images which areas were specified and repeats the same steps.

Claim 70. (New) A game system for playing a game for specifying an area on an image by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other;

an image display means for displaying both images superposed on each other;

an operation image display means for displaying an image; and

an area specifying means for specifying an area on the displayed image;

such that further specifying an area of another image associated with the specified area and repeating the same until all specified images are linked, which has

an image database storing a plurality of image groups each composed of a plurality of images associated with each other in such a way that areas of images can be linked only in a specified order and which presents a group of images for users to specify areas one on each of two images, links two specified areas, adds points of the links and presents remaining images of the group excepting two images which areas were specified and repeats the same steps.

Claim 71. (New) An electronic map display system, comprising a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation system comprising:

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a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images;

an image display means for displaying both images as superposed on each other;

an operation image display means for displaying a plurality of images; and

an area specifying means for allowing a user to specify areas on each of two or more images displayed to the user;

wherein said pseudo 3-D space representation system is embedded in a corresponding position on an electronic map or is linked thereto and displayed thereon.

Claim 72. (New) An electronic map display system, comprising a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation system comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other;

an image display means for displaying both images superposed on each other;

an operation image display means for displaying an image; and

an area specifying means for specifying an area on the displayed image;

wherein said pseudo 3-D space representation system is embedded in a corresponding position on an electronic map or is linked thereto and displayed thereon.

Claim 73. (New) An electronic map providing system comprising a server device having an electronic map database containing a pseudo 3-D spatial electronic map prepared by embedding in corresponding positions thereof or linked thereto pseudo 3-D space representation images created by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said 3-D space representation system comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images;

an image display means for displaying both images as superposed on each other;

an operation image display means for displaying a plurality of images; and

an area specifying means for allowing a user to specify areas on each of two or more images displayed to the user;

wherein the server device connected to a number of client devices through a network retrieves the pseudo 3-D special electronic map in the electronic map database in response to access from the client device and provides it to the client device.

Claim 74. (New) An electronic map providing system comprising a server device having an electronic map database containing a pseudo 3-D spatial electronic map prepared by embedding in corresponding positions thereof or linked thereto pseudo 3-D space representation images created by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said 3-D space representation system comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other;

an image display means for displaying both images superposed on each other;

an operation image display means for displaying an image; and

an area specifying means for specifying an area on the displayed image;

wherein the server device connected to a number of client devices through a network retrieves the pseudo 3-D spatial electronic map in the electronic map database in response to access from the client device and provides it to the client device.

Claim 75. (New) A navigation system comprising a server device comprising an electronic map database containing a pseudo 3-D spatial electronic map comprising a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation comprising:

a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;

an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images; and

an image display means for displaying both images as superposed on each other;


prepared by embedding in corresponding positions thereon or linked thereto a pseudo 3-D space representation image created by using said pseudo 3-D space representation system, wherein the server device is connected to a number of client devices capable of detecting its present position through network and, in response to an access from any client device indicating its current position, it retrieves in the electronic map database and provides the client device with pseudo 3-D spatial electronic map corresponding to the current position, thus navigating the user of the client device.

Claim 76. (New) A navigation system comprising a server device comprising an electronic map database containing a pseudo 3-D spatial electronic map comprising a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other;

an image display means for displaying both images superposed on each other;

an operation image display means for displaying an image; and

an area specifying means for specifying an area on the displayed image;

prepared by embedding in corresponding positions thereon or linked thereto a pseudo 3-D space representation image created by using said pseudo 3-D space representation system, wherein the server device is connected to a number of client devices capable of detecting its present position through network and, in response to an access from any client device indicating its current position, it retrieves in the electronic map database and provides the client device with pseudo 3-D spatial

electronic map corresponding to the current position, thus navigating the user of the client device.

Claim 77. (New) A navigation system comprising an electronic map database containing a pseudo 3-D spatial electronic map prepared by embedding in corresponding positions thereon or linked thereto a pseudo 3-D space representation image created by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation system comprising:

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- a specified area associating means for associating one or more sets of areas specified on one image and the other image or images as common parts;
- an image transforming means for transforming one or both images through affine transformation by matching the corresponding areas specified on the images;
- an image display means for displaying both images as superposed on each other;
- an operation image display means for displaying a plurality of images; and
- an area specifying means for allowing a user to specify areas on each of two or more images displayed to the user;

such that said navigation system navigates a user by detecting a current position, searching an electronic map corresponding to the detected current position

in the electronic database, and displaying the pseudo 3-D spatial electronic map on a display screen of the user device.

Claim 78. (New) A navigation system comprising an electronic map database containing a pseudo 3-D spatial electronic map prepared by embedding in corresponding positions thereon or linked thereto a pseudo 3-D space representation image created by using a pseudo 3-D space representation system for representing a pseudo 3-D space with a plurality of 2-D images, said pseudo 3-D space representation system comprising:

a specified area transforming means for transforming an area specified on an image through affine transformation;

a specified area retrieving means for retrieving a part common with the specified area from plural images;

an image transforming means for transforming one or both images through affine transformation in such a way that the specified area and the retrieved area may be matched with each other;

an image display means for displaying both images superposed on each other;

an operation image display means for displaying an image; and

an area specifying means for specifying an area on the displayed image;

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such that said navigation system navigates a user by detecting a current position, searching an electronic map corresponding to the detected current position in the electronic database, and displaying the pseudo 3-D spatial electronic map on a display screen of the user device.
